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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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1925

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7590

08/15/2006

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EXAMINER

EVANS, JEFFERSON A

ART UNIT

PAPER NUMBER

2627

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



Claims 1 to 21 are pending.

### ***Specification***

1. The disclosure is objected to because of the following informalities:

A...specification page 12 – line 22 and claims 2, 7, 10, 15, and 21 - it appears  $\text{NiFe}_x$  and  $\text{CoFe}_x$  should be  $\text{NiFeX}$  and  $\text{CoFeX}$ , i.e., with X as a regular letter rather than subscripted, otherwise  $\text{NiFe}_x$  and  $\text{CoFe}_x$  would seem redundant of  $\text{NiFe}$  and  $\text{CoFe}$  since a subscripted “x” attached to an element usually indicates the percentage of an element in a material and with x unspecified  $\text{NiFe}_x$  and  $\text{CoFe}_x$  would be the same as  $\text{NiFe}$  and  $\text{CoFe}$ , whereas  $\text{NiFeX}$  and  $\text{CoFeX}$  would indicate a material can be formed of an alloy including  $\text{NiFe}$  or  $\text{CoFe}$  and an additional material X.

B...claim 6 should depend from claim 4 rather than claim 3 to provide proper antecedent basis for “the layer of Platinum-Manganese”. Similarly, claim 14 should depend from claim 12.

C...claim 15 should depend from claim 14 to provide proper antecedent basis for “the coupling layer”. Similarly, claim 21 should depend from claim 20.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-3, 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Carey et al (U.S. 6,671,139). Carey discloses a current-in-plane (CIP) GMR sensor, comprising: a GMR sensor stack (figure 2); a spacer layer (214) formed over a free-layer (212) of the GMR sensor stack; and an in-stack biasing layer (220) disposed over the spacer. The bias layer may be formed from CoFe (column 4 – line 61). Lead layers 228 are formed to either side of the GMR sensor stack.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carey et al. Carey does not appear to disclose a cap layer formed over the bias layer.

Official Notice is given that it was notoriously old and well known in the prior art to cover a GMR sensor with a cap layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Carey with a cap layer over the bias layer. The motivation would have been: the provision of such a cap layer was well known for protecting the layers positioned underneath the cap layer, such as from being negatively affected later in the manufacturing process, and preventing unwanted diffusion between the layer underneath the cap layer and the material over the cap layer.

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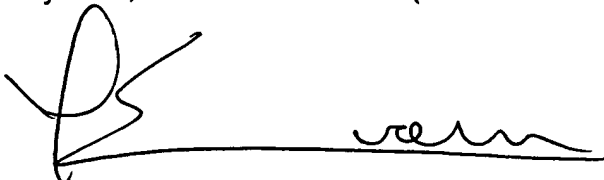
***Allowable Subject Matter***

6. Claims 4-7, 12-15, and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson A. Evans whose telephone number is 571-272-7574. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'JAE', followed by a long horizontal line and a wavy flourish.

JAE  
August 11, 2006

Jefferson A. Evans  
Primary Examiner  
Art Unit 2627

**JEFFERSON EVANS  
PRIMARY EXAMINER**